

**Translation**

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PCT/EP2003/001451

PATENT COOPERATION TREATY



# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002-0204 P	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/001451	International filing date (day/month/year) 13 February 2003 (13.02.2003)	Priority date (day/month/year) 19 February 2002 (19.02.2002)
International Patent Classification (IPC) or national classification and IPC B41C 1/00		
Applicant OCE PRINTING SYSTEMS GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 7 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 12 June 2003 (12.06.2003)	Date of completion of this report 19 March 2004 (19.03.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

Form PCT/IPEA/409 (cover sheet) (July 1998)

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# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/001451

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
 pages 1-24, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages 1-31, filed with the letter of 10 October 2003 (10.10.2003)
- ☒ the drawings:  
 pages 1/6-6/6, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☒ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-16

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV.3

The shared technical features of the subject matter of independent claims 1 and 17 and of claims 10 and 25 are the features indicated in the respective preambles.

However, the technical features which link claims 1 and 17 and claims 10 and 25 are not novel (the preamble shows the prior art - see also the written opinion of 28 July 2003). Consequently, there is no technical relationship between claims 1 and 17 and between claims 10 and 25.

The following inventions or groups of inventions are therefore not so linked as to form a single general inventive concept (PCT Rule 13.1):

Claims 1, 10: Method (claim 1) and unit (claim 10) for producing a printed image on a printing material in which a surfactant layer is applied to the surface of the printing form to produce a hydrophilic layer.

Claims 17, 25: Method (claim 17) and unit (claim 25) for producing a printed image on a printing material, the surface of the printing form being an  $\text{SiO}_2$  layer on which a hydrophilic layer containing  $\text{SiOH}$  molecules is formed by the action of hot steam.

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-16	YES
	Claims		NO
Inventive step (IS)	Claims	1-16	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

## 2. Citations and explanations

1 EP-A-0963839 (D1) discloses the closest prior art. D1 describes a method for producing a printed image on a printing material which involves the following steps:

- a) large-scale exposure with an UV lamp of a printing form, having a surface coating made of a material which becomes highly hydrophilic on UV exposure and highly hydrophobic on IR exposure
- b) application of water to form a thin aqueous film
- c) forming the image on the surface using an IR imaging unit
- d) application of an oil-based ink
- e) transfer of the printed image onto the printing material.

If a new printed image is to be applied, the surface can be cleaned in a cleaning unit and made hydrophilic again by UV irradiation.

The present method differs from the prior art in that, to produce a printed image on a printing material,

- a) a hydrophilic surfactant layer with a layer having a molecular thickness is produced on the printable surface of a printing form

- b) in a structuring process, hydrophilic and hydrophobic areas are produced which correspond to the structure of the printed image that is to be produced
- c) a dampening agent layer is applied to the surface of the printing form, said dampening agent layer being formed only by the hydrophilic areas
- d) ink is applied to the surface, and
- e) the printed image is applied to the printing material. In this method too, the surface can be cleaned for a new structuring process and provided with a new hydrophilic surfactant layer.

The method according to claim 1 and the unit for producing a printed image according to claim 10 are therefore novel.

2. The present invention addresses the problem of providing a printing method and a printing unit which enable digital printing to be carried out with different printed images on the same printing form with a high degree of print quality and using less energy (see page 4, lines 26-30 and page 5, lines 13-17).

This problem is solved in that, instead of a water layer, a surfactant layer having a molecular thickness is applied to the surface of the printing form.

The solution to this problem is not apparent from the prior art and is therefore not obvious to a person skilled in the art.

The subject matter of the present claims 1 and 10

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therefore involves an inventive step.